

Using ADDIE and Systems Thinking as the Framework for Developing a MOOC

A Case Study

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Session Overview

- Project Overview
- Research Questions
- Contemporary Issues Surrounding MOOCs
- User Centered Design & ADDIE
- Methods
- Results
- Q & A




Project Overview

- A mid-sized university in the southeastern US wished to test out the MOOC space.
- Two pilot courses identified by the university:
 - Web Design & Usability
 - The Soul & Search for Meaning
- Web Design & Usability – Developed using ADDIE Framework



Pilot MOOCs

<http://moocs.uncg.edu>




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UNCG Moocs » COURSES

Web Design and Usability



U1:
USABILITY


Click for more information

U4:

UNCG's Web Design and Usability MOOC is broken up into five separate units that collectively seek to help you answer one big question: How do I design, develop, and evaluate usable digital environments?

[Learn more >>](#)

The Soul and the Search for Meaning - Overview



Humanity: the epic story of our species' quest to understand our very existence. Join renowned historian and educator Dr. Stephen Ruzicka in the Soul and the Search for Meaning, a fascinating journey across time, myth and legend, as we explore the spiritual and philosophical origins of the most powerful species in known existence: ourselves.

[Learn more >>](#)

Website Design & Usability MOOC

Designed with a User-Centered Focus

The screenshot displays the homepage of the 'WEB DESIGN AND USABILITY' MOOC. The header features the UNCG logo on the left, the course title in the center, and a search bar with a 'Go' button on the right. A navigation menu below the header lists units: U1: Usability, U2: User-Centered Design, U3: ADDIE Process, U4: Eval and Testing, U5: Web Design, and a Forum. The main content area is divided into three sections. On the left, a large blue graphic with a silhouette of a person thinking is labeled '1 USABILITY'. In the center, a video player shows a scene from a video titled 'Web Design and Usability - Unit 1 ...'. To the right, a box titled 'Unit 1 Sections' lists five items: s1: Keeping it Real, s2: Usability Defined, s3: Info Seeking, s4: Usability & Design, and Video Case Study. Below the video player, a 'Next Up...' section suggests continuing with Unit 1 by visiting the Unit 1, Section 1 overview page. At the bottom of this section is a 'Video Transcript' button. The footer of the page includes the text 'NORTH CAROLINA GREENSBORO'.

UNCG

WEB DESIGN AND USABILITY

Contact | Leaderboard

search here ... Go

U1: Usability U2: User-Centered Design U3: ADDIE Process U4: Eval and Testing U5: Web Design Forum

1 USABILITY

Web Design and Usability - Unit 1 ...

Unit 1 Sections

- s1: Keeping it Real
- s2: Usability Defined
- s3: Info Seeking
- s4: Usability & Design
- Video Case Study

Next Up...

Continue with Unit 1: Usability by visiting the Unit 1, Section 1 overview page.

Video Transcript

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Research Questions

RQ1: What is the process for designing and developing a MOOC?

RQ2: What impact did using the ADDIE model have on MOOC design?

RQ3: What is the relationship between instructional design and MOOCs?



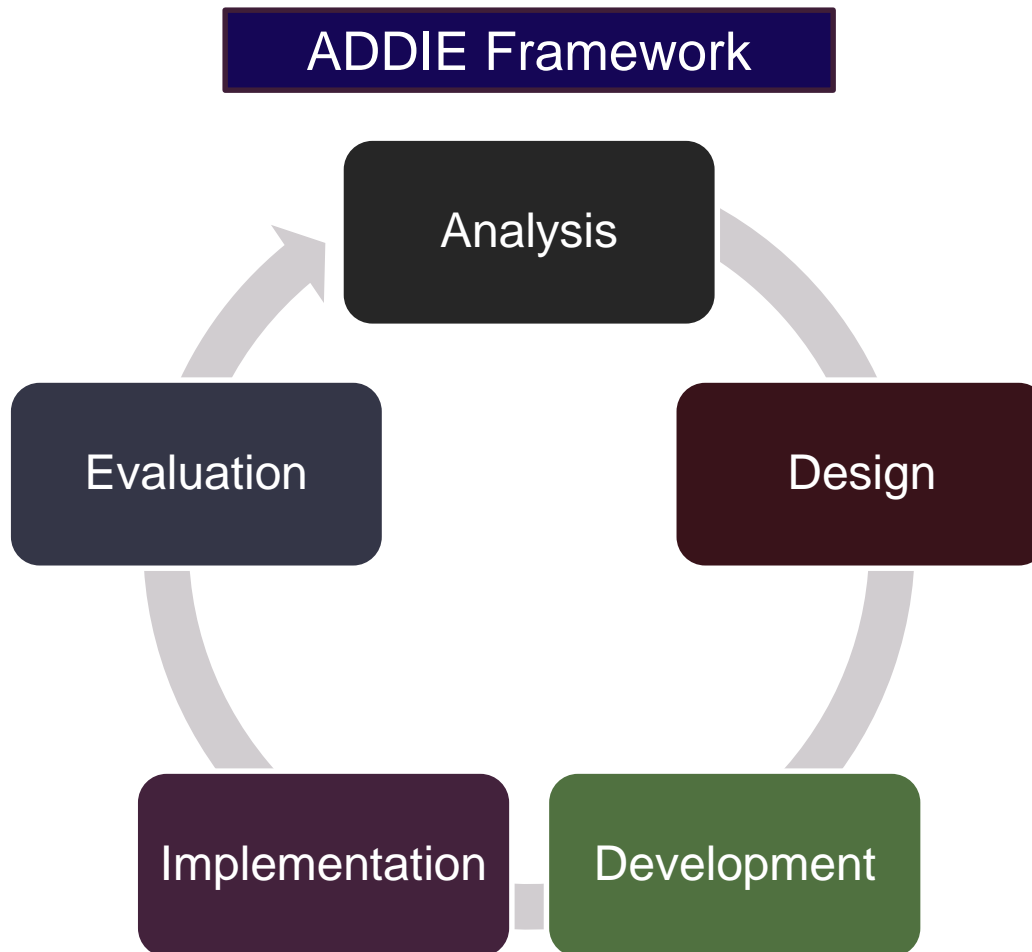
Contemporary Issues

- ✓ Low completion rates overall (5-16%)
- ✓ Concerns regarding student engagement
- ✓ Concerns regarding quality of education MOOCs can offer.
- ✓ Limited opportunities for instructor connection and student interaction.



User Centered Design & ADDIE

User Centered Design – Process of designing a tool from the perspective of how it will be understood and used by the user (Nielson & Loranger, 2006)



Methods

- Case Study Approach – Instructor & Co-Author of paper – closely followed through MOOC design & development
- MOOC designed to teach web design & usability
- Public, mid-sized regional university in southeastern United States
- Interviews – administrators, design team, user group, and student (course completer)
- Instructor added his own perspectives about project



RQ1: Process for Designing & Developing a MOOC

1. Full design team assembled at onset of project
 - Project Manager
 - Instructional Designer
 - Graphic Designer
 - Video Production Team
 - Faculty Member
2. Lead Faculty Member – Ensured ADDIE was followed throughout
3. Financial Resources – University provided \$13,000 for project (\$3500 for faculty compensation)



RQ1: Designing & Developing a MOOC with ADDIE

“A” is for Analysis

University leaders, Chancellor, Production Team, & Lead Faculty Member identified goals of MOOC:

1. Teach, free of charge, how to design a website and basic usability concepts & methods
2. Publicize and brand university
3. Serve as test case for instructional strategies

Target Audience: Young, Male, Tech-Savvy Professionals

RQ1: Designing & Developing a MOOC with ADDIE

“D” is for Design

- Identify Course Objectives
- Create Timeline
- Determine Basic Course Architecture
 - 5 asynchronous units (2-5 sections each)
 - Variety of Presentation Modes
 - Video introductions, unit reviews (MC questions, online discussion, hands on activities, readings, video case studies



RQ1: Designing & Developing a MOOC with ADDIE

“D” is for Design

- Create Outcomes Map
- Determine Acceptable Performance
 - ✓ 90% Mastery

Ultimate Goal

The ability to design, develop, and evaluate usable digital environments.

Five Student Learning Outcomes to arrive at the above, students will have the ability to do apply the following:

1. Usability principles
2. User-centered design
3. A-ADDIE systems design process
4. Develop a highly usable website
5. Articulate history and emerging trends in Web design and usability

Develop a basic website that follows information architecture principles and meets standards for ease of use and utility.

1) Usability

Big Question

What problem is your website solving for your web users?

- Who are your users?
- What are their needs?
- How is your site meeting those needs?
- Is it clearly evident from your home page that your site has what they are looking for?
- Are these user needs prioritized and clearly delineated from other information on your site.

What are we looking for in a website? What makes a website great?

Mediating Goals

- Synthesize formal and alternate definitions of usability to align with relevant examples in a student's experience.
- Apply the usability standards to real life website examples.

RQ1: Designing & Developing a MOOC with ADDIE

“D” is for Development – Usability Review

- Will students learn from course?
- How can it be improved?

The screenshot shows a web browser displaying a MOOC interface. The main content area features a video player titled "Unit 2: Video Case Study" with the subtitle "Web Design and Usability - Unit 2 Case Study". The video player is currently at 0:00 / 11:15. To the right of the video player, there are two sidebar sections: "Unit 2 Sections" and "Unit Links".

Unit 2 Sections

- [s1: Keeping it Real](#)
- [s2: UCD Defined](#)
- [s3: Age Differences](#)
- [s4: UC Web Design](#)
- [Video Case Study](#)

Unit Links

- [U1: Usability](#)
- [U2: U-C Design](#)
- [U3: ADDIE Process](#)
- [U4: Eval and Testing](#)
- [U5: Web Design](#)

Below the video player, there is a "Next up..." section with the text: "That's all for Unit 2. When you're ready, and it doesn't have to be now unless you're really pumped about learning, head over to [Unit 3: ADDIE Process](#)."

The bottom right corner of the slide features the logo of the University of North Carolina at Salisbury, which includes a shield with a yellow and blue design and the text "of NORTH CAROLINA" and "SALISBORO".

RQ1: Designing & Developing a MOOC with ADDIE

“D” is for Development – Usability Review

- **Modifications to Course**
- **Primarily - Changes to Videos**
 - Short videos (15-20 sec) combined to 3-4 min (10 min max) videos
 - Transcripts included
 - Closed captioning

Positive feedback gave production team confidence to proceed.



RQ1: Designing & Developing a MOOC with ADDIE

“I” is for Implementation

- Quiet rollout
- Introduction Page w/ Overview
- Each Unit
 - Intro Video (full transcript)
 - Right Side Bar
 - 2-5 Sections
 - Instructional video
 - 5 question review / assessment
 - Applied activity
 - Readings
 - Supplemental resources



RQ1: Designing & Developing a MOOC with ADDIE – “I”

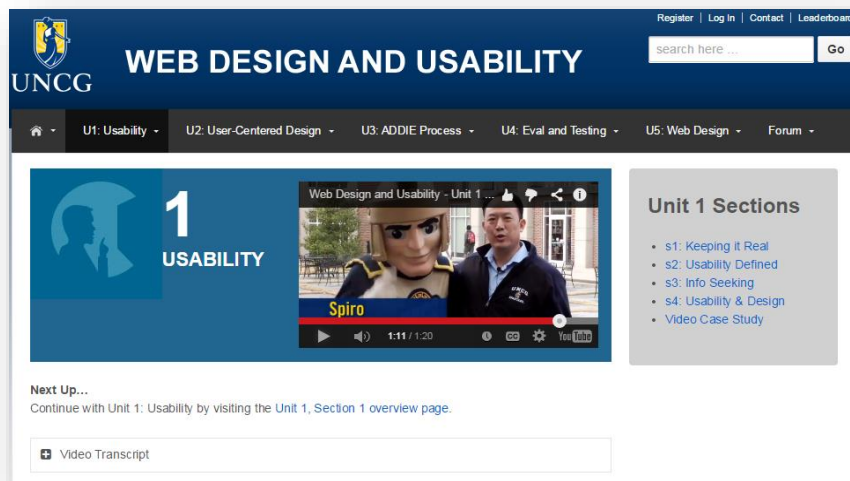
MOOC Welcome Screen



Unit Overview



Dr. Chow & Spiro



Section Homepage



RQ1: Designing & Developing a MOOC with ADDIE – “I”

Unit Review

The screenshot shows the course interface for 'WEB DESIGN AND USABILITY' at UNCG. The navigation bar includes links for U1: Usability, U2: User-Centered Design, U3: ADDIE Process, and U4: Eval and Testing. The main content area is titled 'Unit 1, Section 1: Assessment' and contains a list of four factors of usability: Convenience and Ease-of-Use, Utility and Aesthetics, Cost and Convenience, and Utility and Ease-of-Use. A progress indicator shows 'Question 1 of 5'.

Apply & Reflect on Concepts

The screenshot shows the course interface for 'WEB DESIGN AND USABILITY' at UNCG. The navigation bar includes links for U1: Usability, U2: User-Centered Design, U3: ADDIE Process, U4: Eval and Testing, U5: Web Design, and Forum. The main content area is titled 'Unit 1, Section 1: Apply & Reflect on Concepts' and features a blog post by 'Imkesler' dated August 27, 2014. The post discusses the author's experience with Brooks running shoes and the utility of iPods.

Applied Activity

The screenshot shows the course interface for 'WEB DESIGN AND USABILITY' at UNCG. The navigation bar includes links for U1: Usability, U2: User-Centered Design, U3: ADDIE Process, U4: Eval and Testing, U5: Web Design, and Forum. The main content area is titled 'Unit 1, Section 1: Applied Activity' and contains a list of tasks for students to complete, such as 'How relevant was their site in enabling you to complete the task?' and 'How easy-to-use was their site?'. A sidebar on the right lists 'Unit 1, Section 1' resources: Overview, Assessment, Discussions, Applied Activity, and Readings.

Readings / Add'l Resources

The screenshot shows the course interface for 'WEB DESIGN AND USABILITY' at UNCG. The navigation bar includes links for U1: Usability, U2: User-Centered Design, U3: ADDIE Process, U4: Eval and Testing, U5: Web Design, and Forum. The main content area is titled 'Unit 1, Section 1: Readings' and lists two readings: 'Usability 101 (Nielsen, 2012)' and 'What Does Usability Mean (Quesenberry, 2001)'. A sidebar on the right lists 'Unit 1, Section 1' resources: Overview, Assessment, Discussions, and Applied Activity.



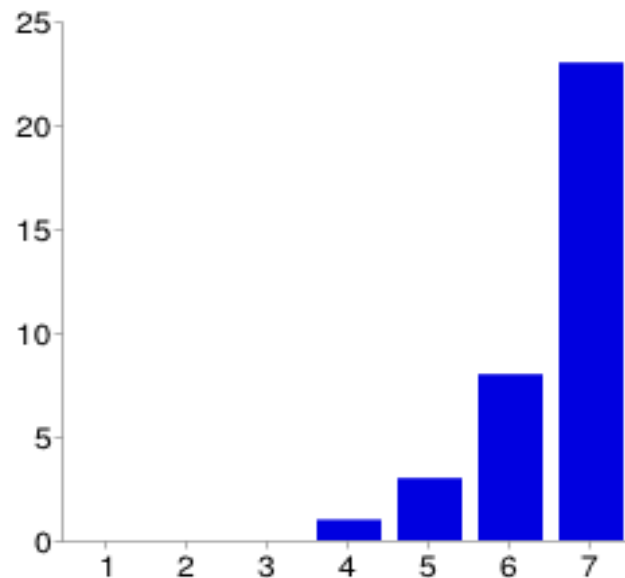
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RQ1: Designing & Developing a MOOC with ADDIE

E” is for Evaluation

- Production team constantly evaluated project.
- Anecdotal evidence – course is successful
- Learners are satisfied

4. Overall I was satisfied with what I have seen of the MOOC.



1	0	0%
2	0	0%
3	0	0%
4	1	3%
5	3	9%
6	8	23%
7	23	66%

RQ2: Impact of ADDIE on MOOC Design

The best thing about a model is that it gives you a process by which to structure what is otherwise a very tiring and complex process (Chow).

ADDIE helped to:

1. Ensure goals are clearly defined
2. Create and timeline and outline needs
3. Keep the team to a timeline
4. Encourage feedback after initial implementation
5. Create environment for periodic feedback and ongoing refinement



RQ3: Relationship between Instructional Design & MOOCs

- Key Factor – Large MOOC enrollment –eliminates instructor's ability to provide feedback.
- Place learner at center of what needs to be accomplished.
- Designing learning activities in way that is value added and material will be used.
- Clear learning objectives
- Activities include learner engagement, cognitive processing, social interactivity
- Learner experiences include multimedia, readings, assessment, socially interactive context



Final Thoughts

- Systems thinking has provided a theoretical and applicable “guiding” framework
- Ensure alignment between institutional elements and organizational goals (Kaufman, 1988)
- Recommended – Team of Production Specialists & Faculty
- Implement instructional design process such as ADDIE that allows constant feedback cycle

Final Thoughts

Q & A



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Thank you!

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Slides:

<http://systemicchange.wordpress.com/research/aect-conferences/aect-2014/13/>



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